Ron J. DeGregorio
Vice President

AmerGen
A PECO Energy/British Energy Company

AmerGen Energy Company, LLC
Oyster Creek
U.S. Route 9 South
P.O. Box 388
Forked River, NJ 08731-0388
Telephone: 609 971 2300

10 CFR 50.90

December 19, 2000
2130-00-20264

U.S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, DC 20555-0001

SUBJECT: OYSTER CREEK GENERATING STATION (OYSTER CREEK)
FACILITY OPERATING LICENSE NO. DPR-16
DOCKET NO. 50-219
LICENSE AMENDMENT REQUEST NO. 283
CONTROL ROOM HABITABILITY

Dear Sir or Madam:

In accordance with 10 CFR 50.4(b)(1), enclosed is License Amendment Request No. 283.

The purpose of this License Amendment Request is to revise the Oyster Creek Technical Specification Section 3.17 Bases to remove reference to the current licensing basis control room calculated dose consequences and substitute the associated regulatory dose limits that apply for control room habitability in accordance with GDC-19 and Standard Review Plan 6.4. The existing licensing basis control room calculated dose values specified in Technical Specification Section 3.17 Bases have been reevaluated as a result of Oyster Creek Licensee Event Report (LER) 00-006 dated June 26, 2000. This reevaluation has confirmed that the control room habitability dose limits continue to be met. However, this reevaluation is based on use of the NRC approved ARCON96 code methodology for calculation of atmospheric dispersion coefficients (X/Q) for the control room intakes and updated site meteorological data. Incorporation of this new methodology and updated meteorological data into the Oyster Creek licensing basis requires NRC prior review and approval.

Using the standards in 10 CFR 50.92, AmerGen Energy Company, LLC (AmerGen) has concluded that these proposed changes do not constitute a significant hazards consideration, as described in the enclosed analysis performed in accordance with 10 CFR 50.91(a)(1). Pursuant to 10 CFR 50.91(b)(1), a copy of this License Amendment Request is provided to the designated official of the State of New Jersey, Bureau of Nuclear Engineering, as well as the chief executive of the township in which the facility is located.

5 Meteorological Data
Diskettes to File Center
A003

If any additional information is needed, please contact David J. Distel at (610) 765-5517.

Very truly yours,

Ron J. DeGregorio
Vice President - Oyster Creek

RJD/djd/vvg

Enclosures: (1) Oyster Creek License Amendment Request No. 283
Safety Evaluation and No Significant Hazards Consideration
(2) Affected Oyster Creek Technical Specification Pages
(3) Reformatted 1995, 1996, 1997, 1998, 1999 Meteorological Data

cc: H. J. Miller, Administrator, USNRC Region I
H. N. Pastis, USNRC Oyster Creek Senior Project Manager
L. A. Dudes, USNRC Oyster Creek Senior Resident Inspector
File No. 00077

Ron J. DeGregorio
Vice President

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Telephone: 609 971 2300

December 19, 2000
2130-00-20264

The Honorable John C. Parker
Mayor of Lacey Township
818 West Lacey Road
Forked River, NJ 08731

Dear Mayor Parker:

Enclosed herewith is one copy of License Amendment Request No. 283 for the Oyster Creek Generating Station Operating License.

This document was filed with the United States Nuclear Regulatory Commission on December 19, 2000.

Very truly yours,

Ron J. DeGregorio
Vice President - Oyster Creek

Attachments

Ron J. DeGregorio
Vice President

AmerGen
A PECO Energy/British Energy Company

AmerGen Energy Company, LLC
Oyster Creek
U.S. Route 9 South
P.O. Box 388
Forked River, NJ 08731-0388
Telephone: 609 971 2300

December 19, 2000
2130-00-20264

Mr. Kent Tosch, Director
Bureau of Nuclear Engineering
Department of Environmental Protection
CN 411
Trenton, NJ 08625

Subject: Oyster Creek Generating Station (Oyster Creek)
Facility Operating License No. DPR-16
License Amendment Request No. 283

Dear Mr. Tosch:

Pursuant to 10 CFR 50.91(b)(1), please find enclosed a copy of the subject document, which was filed with the United States Nuclear Regulatory Commission on December 19, 2000.

Very truly yours

Ron J. DeGregorio
Vice President - Oyster Creek

Attachments

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

In the Matter of)

AmerGen Energy Company, LLC) Docket No. 50-219

Certificate of Service

This is to certify that a copy of License Amendment Request No. 283 for the Oyster Creek Generating Station Operating License, filed with the U.S. Nuclear Regulatory Commission on December 19, 2000 has this day of December 19, 2000 been served on the State of New Jersey, Bureau of Nuclear Engineering, Department of Environmental Protection, and the Mayor of Lacey Township, Ocean County, New Jersey by deposit in the United States mail, addressed as follows:

Mr. Kent Tosch, Director
Bureau of Nuclear Engineering
Department of Environmental Protection
CN 411
Trenton, NJ 08625

The Honorable John C. Parker
Mayor of Lacey Township
818 West Lacey Road
Forked River, NJ 08731

By: 

Ron J. DeGregorio
Vice President - Oyster Creek

AmerGen Energy Company, LLC

Oyster Creek Generating Station

Facility License No. DPR-16

License Amendment Request No. 283
Docket No. 50-219

Applicant hereby submits a proposed change to Appendix A Technical Specification page 3.17-1.

By:

Ron J. DeGregorio
Vice President - Oyster Creek

Sworn and subscribed to before me

this 19 day of December 2000.

Notary Public

GEORGE W. BUSCH
NOTARY PUBLIC OF NEW JERSE
My Commission Expires Aug. 8, 2005

ENCLOSURE 1

Oyster Creek License Amendment Request No. 283 Safety Evaluation and No Significant Hazards Consideration

I. License Amendment Request No. 283

AmerGen Energy Company, LLC (AmerGen) requests that the following changes be made to the existing Technical Specifications volume:

Technical Specification Page: 3.17-1
Revised Technical Specification Bases Page: 3.17-2

The bases are being located to a separate page (3.17-2) from the related Technical Specifications. There are no proposed changes to the Technical Specifications contained on page 3.17-1. A mark-up of the current Technical Specification page 3.17-1 showing the change to the bases is provided in Enclosure 2.

II. Reason for Change

The purpose of this License Amendment Request is to revise the Oyster Creek Technical Specification Section 3.17 Bases to substitute the existing regulatory dose limits for control room habitability in accordance with GDC-19 and Standard Review Plan 6.4, in lieu of the specific analyzed dose values currently specified. Also requested is approval to incorporate ARCON96 methodology and updated site meteorological data into the Oyster Creek control room habitability licensing basis. The proposed use of ARCON96 methodology and the 1995 - 1999 updated meteorological data only applies to the MSIV leakage release point from the Turbine Building to the control room air intake.

The currently specified dose values were incorporated in the Oyster Creek Technical Specification Bases in Amendment No. 139, dated May 29, 1990. The dose values specified in Technical Specification Section 3.17 Bases were affected by the analytical discrepancy documented in Oyster Creek LER No. 00-006, dated June 26, 2000 (1940-00-20147). As stated in Oyster Creek LER No. 00-006, Supplemental Report, dated September 28, 2000 (2130-00-20261), the limiting control room ventilation system ("B" train) atmospheric dispersion coefficients (X/Q) for the control room air intake have been reevaluated using the ARCON96 methodology and an updated set of plant site meteorological data. Oyster Creek control room habitability reevaluation utilizing the ARCON96 methodology and updated meteorological dataset for the most limiting ventilation system intake confirms that doses remain within the existing allowable limits of 5 rem gamma and 30 rem beta as specified in GDC-19 and NRC Standard Review Plan 6.4, and Oyster Creek Technical Specification Amendment Nos. 115 and 139 and associated NRC Safety Evaluations dated March 31, 1987 and May 29, 1990, respectively. Accordingly, this proposed change addresses the Long-Term Corrective

Action identified in Oyster Creek LER No. 00-006 Supplemental Report, dated September 28, 2000.

The proposed change to Technical Specification Section 3.17 Bases will also be consistent with the existing Technical Specification Section 4.17 Bases.

III. Safety Evaluation Justifying Change

The Oyster Creek control room habitability limiting design basis Loss-of-Coolant Accident (LOCA) dose consequences have been reevaluated based on revised atmospheric dispersion coefficients (X/Q) for the control room ventilation system air intakes for systems "A" and "B". The revised X/Q's for the control room air intakes for ground level releases are based on use of the ARCON96 methodology and an updated Oyster Creek site meteorological dataset (1995-1999). The previous control room air intake X/Q's were evaluated using the Murphy-Campe methodology. Existing X/Q values for the elevated stack portion of the release (containment bypass leakage processed by the Standby Gas Treatment System) are not affected and remain unchanged.

The ARCON96 methodology provides an alternative to the Murphy-Campe method and provides a more accurate determination of concentrations in building wakes. This model with the guidance provided by the NRC results in a more accurate prediction of X/Q for control room habitability assessments than previous methods. ARCON96 input values were modified in accordance with draft guidance provided by the NRC Staff in April 2000.

The limiting release points considered for the Oyster Creek design basis LOCA control room dose analysis remain unchanged and consist of leakage through the main steam isolation valves released from the Turbine Building, and containment leakage and ESF leakage as a stack release processed by the Standby Gas Treatment System. This is consistent with the existing Oyster Creek licensing basis as identified in Amendment No. 115, dated March 31, 1987, and the NRC SER dated July 15, 1986 for Oyster Creek compliance with NUREG-0737, Item III.D.3.4 for control room habitability. As stated above, only the X/Q's associated with the limiting Turbine Building release to the control room air intake are reevaluated using ARCON96 and the updated meteorological data.

The revised bounding X/Q's using ARCON96 methodology and 1995-1999 meteorological data are tabulated below. The control room ventilation system "B" air intake is more limiting for the Turbine Building release due to proximity to the postulated release points.

	X/Q Turbine Building (MSIV Leakage) "B" HVAC Intake	**X/Q Turbine Building (MSIV Leakage) "A" HVAC Intake**	**Previous Murphy-Campe "A" Intake**
0 - 8 hrs.	**2.71 E-03**	**2.34 E-03**	**5.18 E-03**
8 - 24 hrs.	**8.76 E-04**	**7.52 E-04**	**3.94 E-03**
24 - 96 hrs.	**8.63 E-04**	**7.15 E-04**	**2.75 E-03**
96 - 720 hrs.	**8.45 E-04**	**6.81 E-04**	**1.66 E-03**

Turbine Building Release

The Turbine Building release from the main steam lines to the "A" and "B" control room air intakes is assumed to diffuse and leak from the Turbine Building East wall. This assumption provides a conservative estimate since, in reality, the release would be from all sides of the building, including the roof.

The release point is conservatively assumed to be at 10 meters and that the elevation of the "A" or "B" air intake are at the same elevation as the release point when calculating the X/Q for that air intake. This assumption eliminates any corrections for wind speed at higher elevations. This approach is consistent with the guidance contained in NRC Regulatory Guide 1.145, Murphy-Campe and Pavan as it provides for the minimum acceptable elevation for determining ground level release X/Q. It is recognized that ARCON96 allows modeling at the release height with wind speed corrections. The X/Q would be smaller with this approach. The release elevation for the Turbine Building release is based on the draft NRC guidance on ARCON96 implementation, April 2000.

The release distance utilized for the Turbine Building release is the shortest horizontal distance from the building surface to the control room air intake as recommended in the draft NRC guidance. The ARCON96 calculation uses the minimum horizontal distance from the air intake to the East wall of the Turbine Building.

The initial diffusion coefficients for the Turbine Building release are calculated using Section 4.3.3 of the draft NRC guidance. The height and width of the source area are

taken as the maximum vertical and horizontal dimensions of the building cross-sectional area and perpendicular to the line of sight to the control room intake.

The building wake area is calculated as the largest area perpendicular to the wind direction (equivalent to the line of sight direction from the receptor to the source). The wake area has been calculated assuming that the wind direction is perpendicular to the turbine building and that it comes from a diffuse source with a center at a point perpendicular to the line of sight from the respective air intake.

Approach and Methodology

The basic diffusion model implemented in the ARCON96 code is a straight line Gaussian model that assumes the release rate is constant for the entire period of release. This assumption is made to permit evaluation of potential effects of accidental releases without having to specify a complete release sequence.

ARCON96 permits evaluation of building wake effects in the evaluation of relative concentrations from ground-level releases. Diffusion coefficients used in ARCON96 have three components. The first component is the diffusion coefficient used in other NRC models. The other two components are corrections to account for enhanced dispersion under low wind speed conditions and in building wakes.

Parameter values for the correction factors are based on analysis of diffusion data collected in various building wake diffusion experiments. The diffusion coefficients in ARCON96 account for both low-wind speed meander and wake effects.

ARCON96 calculates relative concentrations using hourly meteorological data. It then combines the hourly averages to estimate concentrations for periods ranging in duration from 2 hours to 30 days. Wind direction is considered as the averages are formed. As a result, the averages account for persistence in both diffusion conditions and wind direction. Cumulative frequency distributions are prepared from the average relative concentrations. Relative concentrations that are exceeded no more than five percent of the time (95^{th} percentile relative concentrations) are determined from the cumulative frequency distributions for each averaging period. Finally, the relative concentrations for five standard averaging periods used in control room habitability assessments are calculated from the 95^{th} percentile relative concentrations.

The following summarizes the inputs for the ARCON96 calculation. Default value inputs were modified in accordance with NRC Staff recommendations for ARCON96 implementation, April 2000.

RECEPTOR INPUT	**TURBINE BUILDING**
Distance to Receptor	
A intake	16.5 m
B intake	12.4 m
Intake Height	10 m
Elevation Difference	0
Direction to Source	255°
SOURCE TYPE	
Release Height	10 m
Building Wake Area	2129.1 m^2
METEOROLOGICAL INPUT	
Upper Measurement Height	115.8 m
Lower Measurement Height	10 m
DEFAULT VALUES	
Initial Diffusion Coefficients	
ρ_y =	13.6 m
ρ_z =	4.4 m

Meteorological Data

Site meteorological data for 1995, 1996, 1997, 1998, and 1999 have been utilized as input to the code for determining the 95th percentile X/Q values. This data is provided in Enclosure 3. The proposed control room intake accident X/Q values are based on a larger database of meteorological data than the current licensing basis control room intake X/Q values (1982 - 1983). This larger and updated database provides a more accurate representation of conservative accident X/Q values than previously utilized in control room habitability dose analysis for Oyster Creek. Data used in the analysis were collected from the site meteorological tower. The Oyster Creek meteorological tower provides sensors for wind speed, direction and temperature at elevations 33 feet, 150 feet, and 380 feet with redundant sensors at the 33 feet and 380 feet elevations in accordance

with NRC Regulatory Guide 1.23 requirements. A processor calculates delta temperature and stability class between those elevations. Wind speed, direction and stability class for elevation-150 feet were not included in the ARCON96 meteorological files, since elevations 33 feet and 380 feet are representative of the postulated ground level and stack release points and there is no mixed mode release assumed.

The meteorological variables are measured every 10 seconds and are averaged for 15-minute periods before being archived. The meteorological data is reviewed on a 15-minute basis (for the previous day), and redundant sensors undergo a statistical analysis to ensure proper data is used in air dispersion analysis. The meteorological tower sensors, chart recorders, and processors are calibrated at least semi-annually as per Regulatory Guide 1.23. Data recovery for the years 1995 - 1999 have consistently shown to be significantly greater than 90%.

As shown in the revised ARCON96 X/Q values listed above, the "B" HVAC Intake is more limiting than the "A" HVAC Intake. However, the "B" HVAC Intake X/Q values based on ARCON96 and 1995 - 1999 meteorological data are less than the previous Oyster Creek licensing basis "A" HVAC Intake X/Q values which were based on Murphy-Campe methodology and 1982 - 1983 meteorological data. Since doses calculated from releases are linear with the dispersion term, this change to the ARCON96 methodology and 1995 - 1999 meteorological data results in a control room operator accident dose less than the existing licensing basis calculated values of 29.1 rem beta and 3.14 gamma as stated in the existing Oyster Creek Technical Specification Section 3.17 Bases.

Substitution of the regulatory dose limits for the control room operator in lieu of the analyzed values in Technical Specification Section 3.17 Bases is an administrative change to be consistent with Technical Specification Section 4.17 Bases.

IV. Information Supporting a Finding of No Significant Hazards

AmerGen has concluded that the proposed change, to remove the specific dose values from Technical Specification Section 3.17 Bases and substitute the applicable regulatory limits, and to incorporate ARCON96 methodology using updated meteorological data in the Oyster Creek licensing basis, does not involve significant hazards. In support of this determination, an evaluation of each of the three standards set forth in 10 CFR 50.92 is provided below.

1. The proposed change does not involve a significant increase in the probability or consequences of an accident previously evaluated.

   Substitution of the applicable regulatory limits for operator dose in lieu of the specific analyzed values in Technical Specification Section 3.17 Bases is an administrative change to be consistent with the existing Technical Specification 4.17 Bases. The proposed change to utilize ARCON96 methodology and updated meteorological data results in control room operator doses that are less than the previously analyzed values and, therefore, remain within the allowable limits. The probability of accidents is not affected by the computer codes used to assess the consequences of environmental releases. The use of updated, more extensive meteorological data provides a more accurate atmospheric dispersion coefficient (X/Q) value for the Turbine Building release to the control room ventilation system air intake.

   Therefore, the proposed change does not involve a significant increase in the probability or consequences of an accident previously evaluated.

2. The proposed change does not create the possibility of a new or different kind of accident from any accident previously evaluated.

   The change to incorporate ARCON96 methodology and updated meteorological data for assessing the control room operator doses from the releases of radioactive material following an accident has no affect on creating a new or different kind of accident. The proposed change does not affect the operation or functionality of any structures, systems or components.

   Therefore, the proposed change does not create the possibility of a new or different kind of accident from any accident previously evaluated.

3. The proposed change does not involve a significant reduction in a margin of safety.

   The proposed change involves an administrative revision to Technical Specification Section 3.17 Bases to substitute applicable regulatory limits in lieu of the specific analyzed dose values. The proposed change to incorporate ARCON96 methodology and updated meteorological data results in a more accurate determination of conservative control room air intake X/Q values and the resulting control room operator dose. ARCON96 is an NRC approved methodology which provides an acceptable level of conservatism. The updated

meteorological data is obtained in accordance with NRC Regulatory Guide 1.23 requirements.

Therefore, the proposed change does not involve a significant reduction in a margin of safety.

V. Information Supporting an Environmental Assessment

An environmental assessment is not required for the proposed change since the proposed change conforms to the criteria for "actions eligible for categorical exclusion" as specified in 10 CFR 51.22(c)(9). The proposed change will have no impact on the environment. The proposed change does not involve significant hazards as discussed in the preceding section. The proposed change does not involve a significant change in the types or significant increase in the amounts of any effluents that may be released off-site. In addition, the proposed change does not involve a significant increase in individual or cumulative occupational radiation exposure.

VI. Conclusion

The proposed change has been reviewed in accordance with Section 6.5 of the Oyster Creek Technical Specifications, and it has been concluded that incorporation of ARCON96 methodology and updated meteorological data in the Oyster Creek licensing basis requires NRC approval. As discussed above, using the standards in 10 CFR 50.92, AmerGen has determined that there are no significant hazards involved with the proposed change.

AmerGen requests that the amendment authorizing this change be effective immediately upon issuance.

ENCLOSURE 2

Affected Oyster Creek Technical Specification Pages

3.17 Control Room Heating, Ventilating, and Air-Conditioning System

Applicability: Applies to the operability of the control room heating, ventilating, and air conditioning (HVAC) system.

Objective: To assure the capability of the control room HVAC system to minimize the amount of radioactivity from entering the control room in the event of an accident.

Specifications:

A. The control room HVAC system shall be operable during all modes of plant operation.

B. With one control room HVAC system determined inoperable:

1. Verify once per 24 hours the partial recirculation mode of operation for the operable system, or place the operable system in the partial recirculation mode; and

2. Restore the inoperable system within 7 days, or prepare and submit a special report to the Commission in lieu of any other report required by Section 6.9, within the next 14 days, outlining the action taken, the cause of the inoperability and the plans/schedule for restoring the HVAC system to operable status.

C. With both control room HVAC systems determined inoperable.

1. During Power Operation: place the reactor in the cold shutdown condition with 30 hours

2. During Refueling:

(a) Cease irradiated fuel handling operations; and

(b) Cease all work on the reactor or its connected systems in the reactor building which could result in inadvertent releases of radioactive materials.

Basis: (move basis to page 3.17-2)

The operability of the control room HVAC system ensures that the control room will remain habitable for operations personnel during a postulated design basis accident. The control room envelope includes the control room panel area, the shift supervisor's office, toilet room, kitchen, and lower cable spreading room. Since Systems A and B do not have HEPA filters or charcoal absorbers, the supply fan and dampers for each system minimize the beta and gamma doses to the operators by providing positive pressurization and limiting the makeup and infiltration air into the control room envelope. For the supply of 100% outside air to the control room envelope, the ~~dose increase to 29.1 rem beta and 3.14 rem gamma for the assumed 30 days; however, these values are within the allowable limits.~~

radiation exposure to personnel occupying the control room is limited to less than a 30-day integrated gamma dose of 5 Rem, and a 30-day integrated beta dose of 30 Rem.

ENCLOSURE 3

Reformatted 1995, 1996, 1997, 1998, 1999 Meteorological Data (via Magnetic Media Electronic Diskette)